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Chromis woodsi, A New Species of Damselfish (Pomacentridae) from the Western Indian Ocean with a Redescription of *Chromis axillaris* (Bennett), 1831

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ABSTRACT

A new species of damselfish, *Chromis woodsi*, with 14 dorsal spines, is described. It was collected off the Somalia Coast of Eastern Africa and the Mozambique Channel in 1964 by the research vessel *Anton Bruun* for the International Indian Ocean Expedition. *Chromis axillaris* (Bennett) was collected for the first time since the original description in 1831 and is redescribed.

INTRODUCTION

Only one species of *Chromis* with 14 dorsal spines is known to occur in the Western Indian Ocean (Bennett, 1831). This paper describes a new species of *Chromis* with 14 dorsal spines and redescribes the poorly known species, *C. axillaris* (Bennett), 1831. Specimens were collected under the direction of Dr. Leslie W. Knapp, *Anton Bruun* Cruise 8, and Dr. H. A. Fehlmann, *Anton Bruun* Cruise 9, while participating in the International Indian Ocean Expedition (IIOE).

METHODS AND MATERIALS

The methods of counting and measuring are the same as those described in detail by Allen (1972) with two exceptions. The length

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of the dorsal and anal spines are measured proximally at the base of the spine rather than the point at which the spine emerges from the scaly sheath. The angular length of the caudal peduncle is the oblique distance from the rear base of the last anal ray to the base of the middle caudal ray. Measurements were made using dial calipers to the nearest one-tenth millimeter (mm). Standard length is abbreviated as SL. Regarding the morphometric proportions given in the "Description" sections, the first figure given is the mean; bracketed numbers, the range; and the third figure in the series, refers to the holotype.

Type material has been deposited at the following institutions: Bernice P. Bishop Museum, Honolulu (BPBM); Field Museum of Natural History, Chicago (FMNH); Royal Ontario Museum, Toronto (ROM); Western Australian Museum, Perth (WAM).

KEY TO THE WESTERN INDIAN OCEAN SPECIES OF *CHROMIS* WITH FOURTEEN DORSAL SPINES

1a. Three spiniform procurrent caudal rays; dorsal XIV,11-12; anal II,12-13; total gill rakers 23 to 25; black stripe on anterior distal membranes of anal fin. . . . . *C. woodsi* n. sp.

1b. Two spiniform procurrent caudal rays; dorsal XIV,13-14; anal II,11-13; total gill rakers 26 to 29; no black stripe on anal fin. . . . . *C. axillaris* (Bennett), 1831

SYSTEMATIC DESCRIPTIONS

Chromis woodsi new species. Figures 1, 2; Table 1.

Type specimens.—Holotype: FMNH 85011, 74.0 mm. SL, Western Indian Ocean, Eastern Africa, Somalia Coast; 11° 24′ N., 61° 35′ E., depth 75-175 m., trawl station. IIOE, *Anton Bruun* Cruise 9, Station 463. H. A. Fehlmann. December 17, 1964. Paratypes (16): FMNH 85012, 69.3 mm. SL, Same data as holotype. FMNH 84998-85002, 52.6-68.9 mm. SL, Western Indian Ocean, Eastern Africa, Somalia Coast; 11° 37′ N., 51° 27′ E., depth 67-72 m., trawl. IIOE, *Anton Bruun* Cruise 9, Station 465. H. A. Fehlmann. December 18, 1964. WAM P26020-001, 69.0 mm. SL, Western Indian Ocean, Mozambique Channel; 19° 09′ S., 36° 55′ E., depth 88 m., shrimp trawl. IIOE, *Anton Bruun* Cruise 8, Station 403E, LK-64-46. L. W. Knapp. October 9, 1964. FMNH 85014-16, 62.0-67.2 mm. SL, same data as WAM P26020-001. BPBM 21080, 63.7 mm. SL, Western Indian Ocean; 09° 36′ N., 51° 01′ E., depth 78-82 m., Gear GMT. IIOE, *Anton Bruun* Cruise 9, Station 444. H. A. Fehlmann. December 16, 1964. ROM 34301, 57.2 mm. SL, same

TABLE 1. Proportional measurements of some of the type specimens of *Chromis woodsi* (in thousandths of the standard length)

Item	Holotype	Paratypes					Mean
	85011*	85012	84501	84998	84999	84500	$\bar{x}$
Standard length (mm.)	74.0	69.3	68.9	68.2	64.1	55.7	-
Body depth	556	556	522	508	548	555	541
Body width	226	202	216	194	208	183	205
Head length	344	328	342	356	356	348	346
Snout length	55	50	54	63	84	83	65
Diameter of orbit	162	150	156	148	168	160	157
Bony interorbital width	107	104	113	100	120	105	108
Length of upper jaw	132	116	125	117	122	125	123
Least depth of caudal peduncle	141	149	144	148	142	148	145
Angular length of caudal peduncle	151	150	165	141	154	153	152
Snout to origin of dorsal fin	434	418	434	407	446	462	434
Snout to origin of anal fin	750	732	747	762	791	776	760
Snout to origin of pelvic fins	450	431	445	481	474	504	464
Length of first dorsal spine	99	95	115	108	98	110	104
Length of second dorsal spine	153	142	150	139	162	182	155
Length of fourth dorsal spine	200	198	196	171	217	202	197
Length of longest dorsal ray	256	-	227	238	256	-	244
Length of base of dorsal fin	614	632	623	614	615	599	616
Length of first anal spine	82	87	83	97	75	93	86
Length of second anal spine	224	232	201	200	216	231	217
Length of longest anal ray	236	222	-	224	202	217	217
Length of base of anal fin	224	241	226	238	235	245	235
Length of middle caudal ray	228	231	236	220	208	269	232
Length of pectoral fin	342	320	329	325	311	346	329
Length of pelvic spine	189	203	201	213	182	207	199
Length of pelvic fin	274	307	326	279	321	355	310

*All specimen numbers are from Field Museum of Natural History.

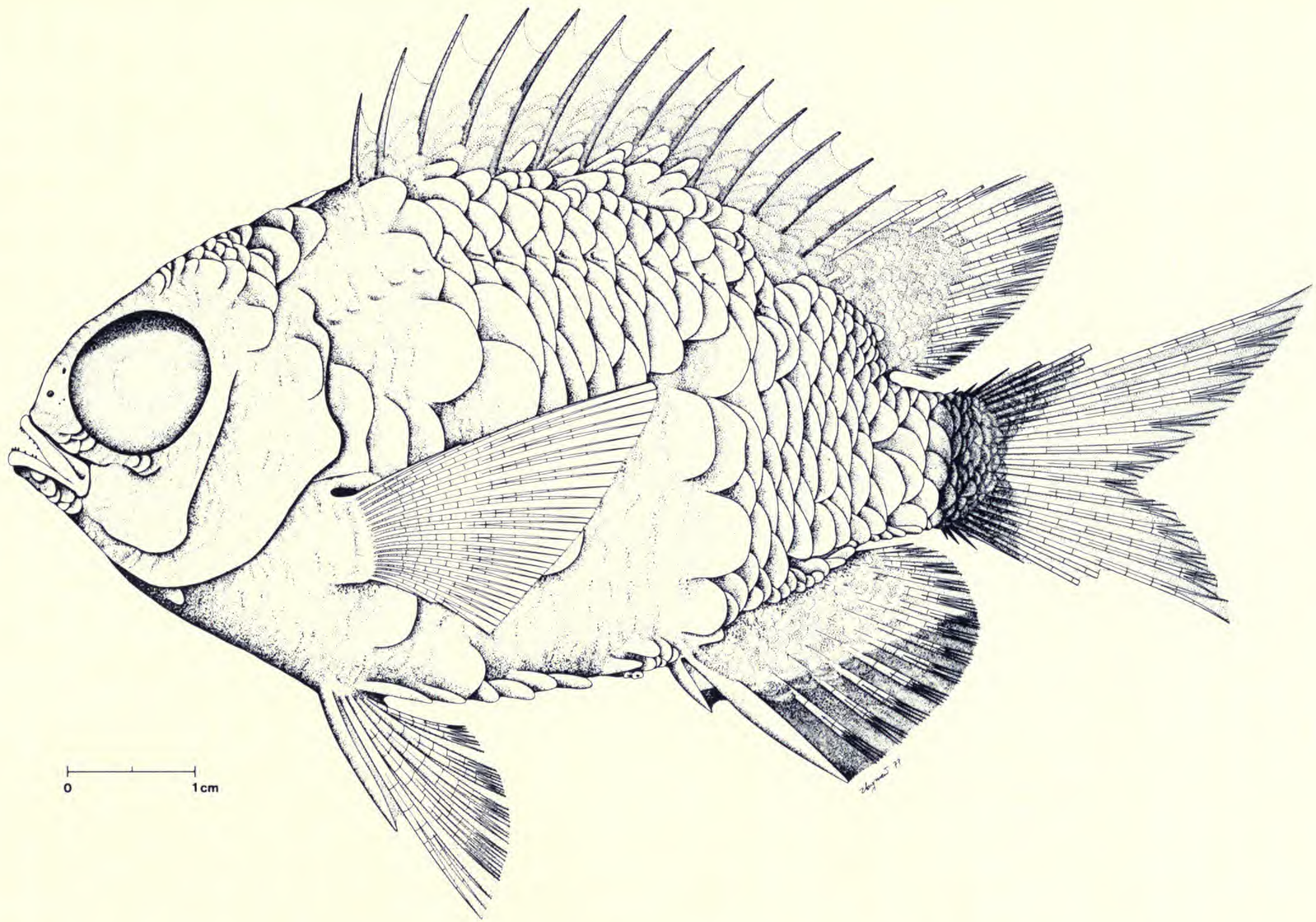

FIG. 1. Holotype of *Chromis woodsi*, FMNH 85011, 74.0 mm. SL, Somalia Coast, depth 75-175 m., areas with missing scales, especially on head and around pectoral fin, are shown in stippling.

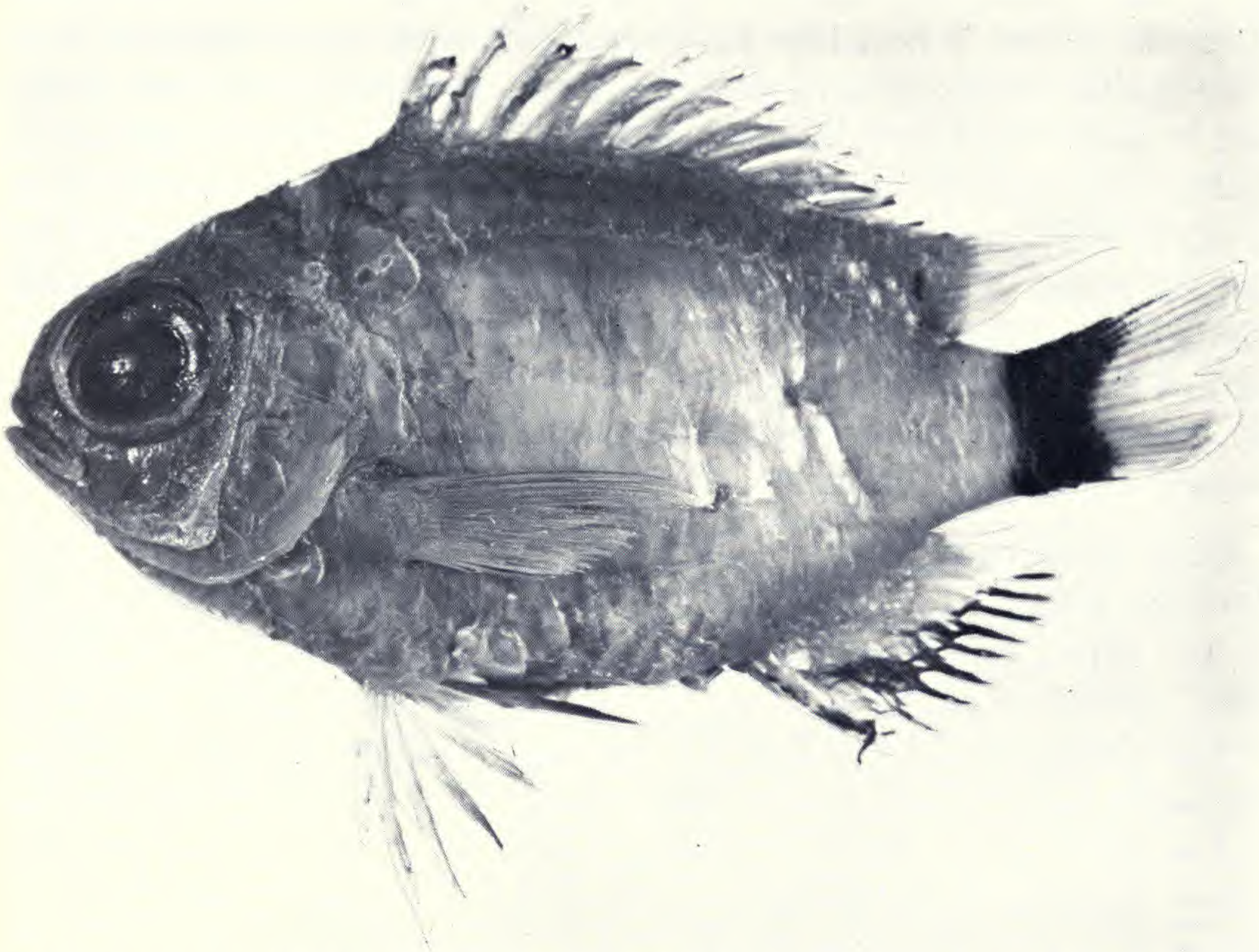

FIG. 2. Paratype of *Chromis woodsi*, FMNH 84999, 64.1 mm. SL, Somalia Coast, depth 67-72 m.

data as BPBM 21080. FMNH 85019-21, 36.3-54.8 mm. SL, Western Indian Ocean; Eastern Africa; Off Somalia Coast; 10° 00′ N., 51° 15′ E., depth 59-61 m., trawl. IIOE, *Anton Bruun* Cruise 9, Station 447. H. A. Fehlmann. December 16, 1964. FMNH 85022, 63.5 mm. SL, Western Indian Ocean: Eastern Central Africa: Off Somalia Coast: 02° 42′ S., 40° 53′ E., depth 140 m., shrimp trawl. IIOE, *Anton Bruun* Cruise 8, Station 420A, LK-64-101. L. W. Knapp. November 6, 1964.

Description.—Dorsal XIV,11-12; anal II,12-13; pectoral rays 17 or 18; caudal fin formula I-I-I-iii,13,iii-I-I-I, that is, 3 spiniform procurrent caudal rays followed by 3 unbranched caudal rays with 13 branched caudal rays; lateral-line scales with tubes 17 to 18; vertical scale rows from upper end of gill opening to caudal base 22 or 23; scales above lateral line to origin of dorsal fin 3; scales below lateral line to origin of anal fin 8 to 10; circumpeduncular scales 15; gill rakers 6 or 7 + 1 + 16 to 18; branchiostegal rays 6.

Roentgenograms of five paratypes (FMNH 84998-85002) show 3 predorsals; vertebrae 11 + 15 (includes fused preural centrum 1 +

stegural); caudal fin with 3 epurals; hypurals 1 and 2 separate, hypurals 3 and 4 fused or separate, hypural 5 small, reduced to a thin splint; hypurapophysis on parhypural a thin produced spike, not forked, thickened, or bent; first and second ventral spiniform procurrent caudal rays supported by haemal spine of preural centrum 3; third ventral spiniform procurrent caudal ray supported by haemal spine of preural centrum 2; first dorsal spiniform procurrent caudal ray supported by neural spine of preural centrum 3 and epural 1; second dorsal spiniform procurrent caudal ray supported by epurals 1 and 2; third dorsal spiniform procurrent caudal ray supported by epurals 2 and 3.

Body moderately deep, depth 1.9 [1.8-2.0] 1.8 in SL, and compressed, width 2.7 [2.4-3.0] 2.5 in depth; head length 2.8 [2.6-3.0] 2.9 in SL; snout 5.3 [4.2-6.6] 6.2 in head; eye 2.2 [2.0-2.4] 2.1 in head; bony interorbital width 3.4 [3.0-4.4] 3.2 in head; least depth of caudal peduncle 2.4 [2.2-2.7] 2.4 in head; angular length of caudal peduncle 2.3 [2.0-2.5] 2.3 in head; snout to origin of dorsal fin 2.3 [2.2-2.5] 2.3 in SL; snout to origin of anal fin 1.3 [1.1-1.4] 1.3 in SL; snout to origin of pelvic fin 2.1 [1.8-2.3] 2.2 in SL; base of anal fin 2.6 [2.4-2.8] 2.7 in base of dorsal fin; first dorsal spine 1.5 [1.3-1.7] 1.5 in second spine; second dorsal spine 1.3 [1.1-1.5] 1.3 in fourth spine; fourteenth dorsal spine 1.5 [1.3-1.9] 1.5 in fourth spine; longest dorsal soft ray 1.5 [1.2-1.8] 1.4 in head; first anal spine shorter than first dorsal spine, its length 2.6 [2.0-3.2] 2.7 in second anal spine; second anal spine 1.6 [1.4-1.9] 1.5 in head; longest anal soft ray 1.6 [1.5-1.8] 1.5 in head; middle caudal ray 4.2 [3.7-4.8] 4.4 in SL; the longest pectoral ray 3.0 [2.6-3.3] 2.9 in SL; the longest pelvic ray 3.1 [2.5-3.6] 3.6 in SL; pelvic spine 1.8 [1.6-2.0] 1.8 in head; length of upper jaw 3.0 [2.6-3.4] 2.6 in head; height of cheek 4.0 [3.6-4.8] 3.8 in head; orbit to angle of preopercle 3.6 [3.1-4.4] 3.3 into head.

Mouth terminal, oblique, small, maxillary extending to slightly beyond a vertical at anterior edge of eye; upper jaw with 42-72 teeth in outer row; lower jaw with 34-47 teeth in outer row; 1-2 irregular rows of small teeth medial to outer row at front of upper and lower jaw; lips and unscaled portion of snout above upper lip with tiny papillae; anterior nostril with a low fleshy rim, elevated posteriorly into a small flap. Second nostril a small slit, situated about 1 anterior nostril diameter from anterior edge of eye and about 2 anterior nostril diameters above the dorsal corner of infraorbital 1 (lachrymal).

Scales ctenoid; head fully scaled except narrow zone at front of

snout and a narrow corridor from eye to upper lip containing anterior nostril and posterior nostril slit, single row of scales on infraorbitals; ventral margins of infraorbitals 1 and 2 free, infraorbitals 3, 4, and 5 adnate; 4 rows of scales below this to lower margin of preopercle; 1 or 2 horizontal scale rows on interopercle. Spinous portion of dorsal fin with a basal scaly sheath of 1 or 2 scales in width; above this on each interspinous membrane a column of progressively smaller scales which extend approximately halfway to margin of fin; scaly sheath of soft portion of fin not well differentiated from smaller scales above which extend about halfway out between the anterior soft rays but less between the posterior rays. Anal fin with a basal scaly sheath of 2 or 3 scales in width; distally from this on each interspinous membrane a column of progressively smaller scales which extend approximately halfway to two-thirds out between the anterior rays but less between the posterior rays. Small scales on caudal fin extending about half distance to posterior margin. Pectoral fins scaled only basally. Axillary scale of pelvic fins 2.0 [1.6-2.4] 1.8 into pelvic spine; intermediate pelvic axillary scale 1.9 [1.7-2.7] (missing for holotype) in pelvic spine. Tubed part of lateral line ending beneath or anterior to origin of third dorsal ray; 2 to 4 scales with neuromast pits posterior to tubed scales descending in an arc to midline and an additional 6 to 9 scales with neuromast pits mid-laterally on caudal peduncle to caudal base.

COLOR AFTER PRESERVATION: Ground color of the body golden-orange. Black to dark brown band or "chevron" around the caudal peduncle. Anterior vertical face of chevron sharply delineated, begins at origin of last midline scale, middle caudal ray at apex of indentation; dorsal lobe of chevron usually slightly longer than ventral lobe. Eye with a dorso-anterior black patch. Pectoral fins with clear membranes; axillary spot black dorsally, dusky ventrally; basal scales on anterior face of pectorals with black-brown speckles. Membranes of dorsal, anal, and pelvic fins speckled or dusky. Anal fin with black stripe on membrane starting between the two anal spines and continuing to anal fin ray 8 or 9 and sometimes to tenth ray.

Remarks.—Chromis woodsi is distinguished from all other species of the genus by the combination of three characters: (1) presence of a caudal band, (2) presence of a black stripe on distal margins of anal fin, and (3) a dorsal fin formula of XIV,11-12. Additional characters useful in separating this species from other *Chromis* are as follows: 17-18 pectoral rays; anal fin formula II,12-13; three spiniform pro-

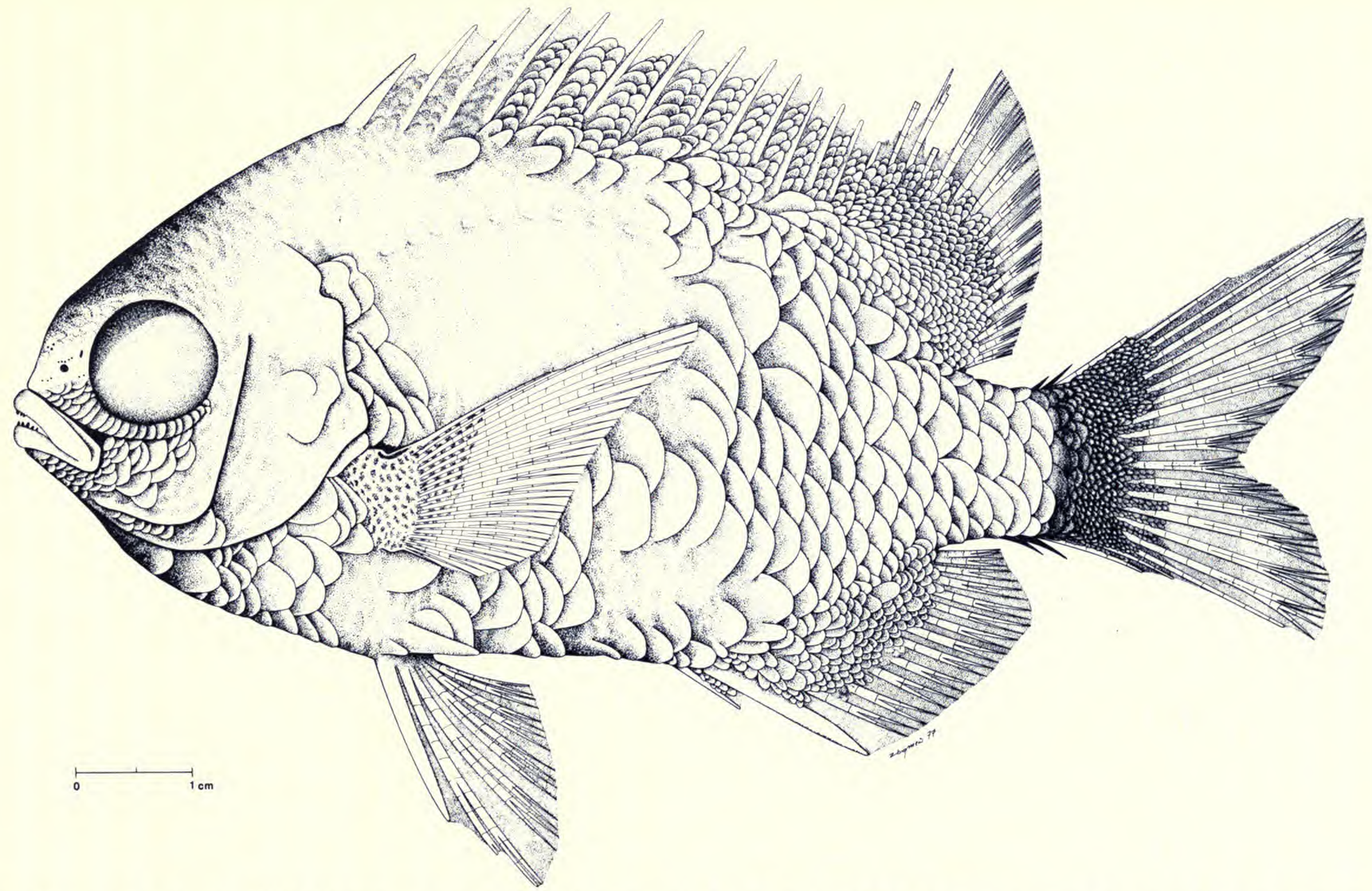

FIG. 3. *Chromis axillaris*, FMNH 85005, 91.5 mm. SL, Somalia Coast, depth 67-72 m., areas with missing scales, especially on head and around pectoral fin, are stippled. Dorsal fin, especially soft dorsal, has been pulled erect to show bifurcations of soft rays.

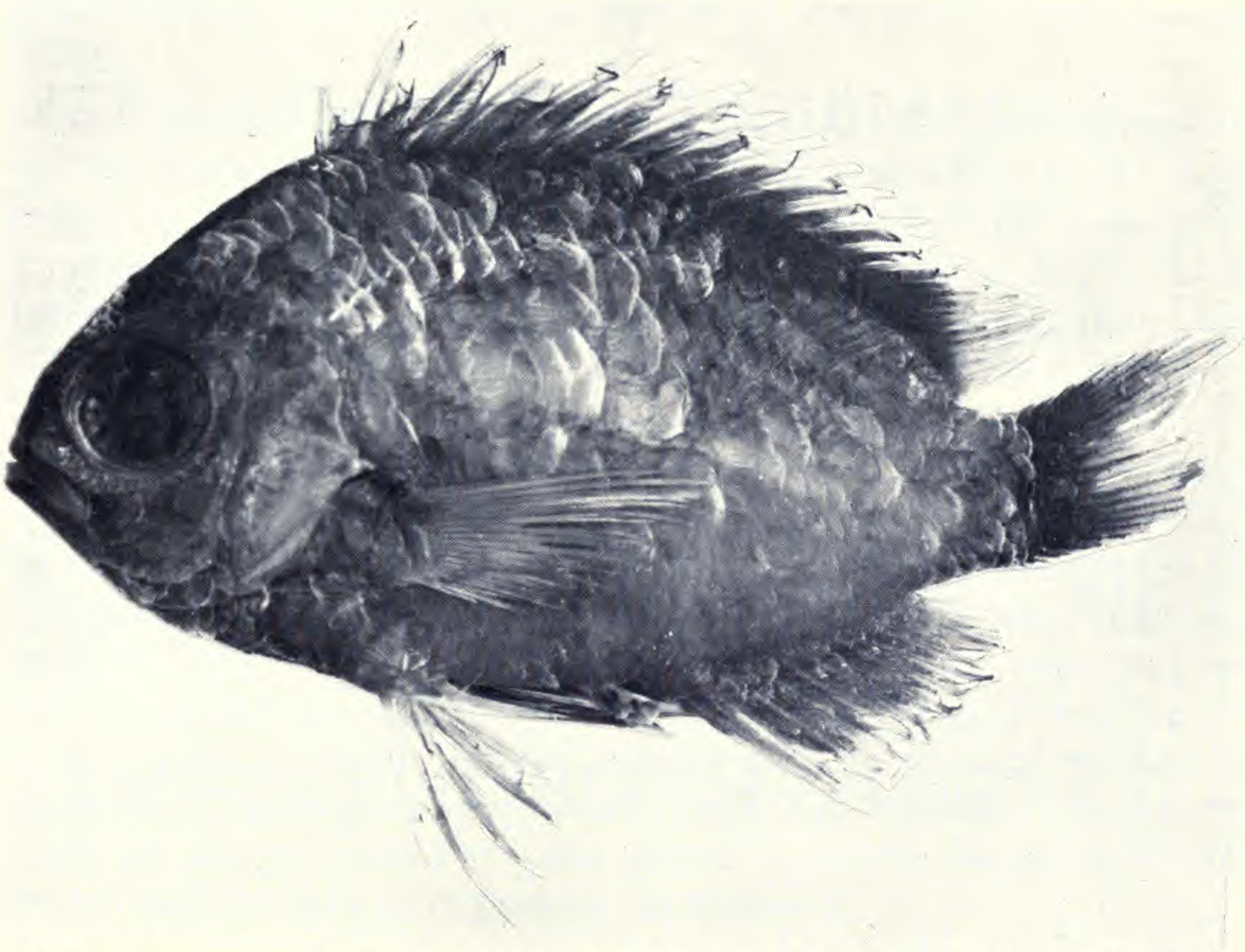

FIG. 4. *Chromis axillaris*, FMNH 85007, 61.9 mm. SL, Somalia Coast, depth 67-72 m.

current caudal rays; 15 circumpeduncular scales; and a gill raker formula for the first gill arch of 6-7 + 1 + 16-18 with a total gill raker count of 23 to 25.

The species has been collected from depths of 59-175 m. Specimens FMNH 84999, 85021, and ROM 34301 collected in December are females ripe with eggs.

Etymology.—Chromis woodsi is named in honor of Loren P. Woods, Curator Emeritus of Fishes, Field Museum of Natural History, in recognition of his pioneer work on the Family Pomacentridae and his contributions to our understanding of Indo-Pacific fishes.

Chromis axillaris (Bennett), 1831. Figures 3, 4; Table 2.

Heliases axillaris Bennett, 1831, Proc. Zool. Soc. London, **1830-1831**, Pt. 1, p. 128.

Type specimen.—Holotype lost; type locality, Mauritius; no size.

Comparative material.—Eight specimens, FMNH 85003-85010, 55.8-91.5 mm. SL, Western Indian Ocean; Eastern Africa; Somalia Coast; 11° 37′ N., 51° 27′ E., depth 67-72 m., trawl station. IIOE,

TABLE 2. Proportional measurements of *Chromis axillaris* (in thousandths of the standard length)

Item	Comparative material						Mean
	85005*	85003	85006	85004	85008	85007	$\bar{x}$
Standard length (mm.)	91.5	88.2	85.1	84.0	83.1	61.9	-
Body depth	550	560	541	564	555	572	557
Body width	196	192	199	199	196	185	194
Head length	333	337	348	350	341	349	343
Snout length	79	87	61	88	74	71	77
Diameter of orbit	131	129	132	135	135	151	136
Bony interorbital width	108	111	111	118	111	118	113
Length of upper jaw	115	110	110	110	118	115	113
Least depth of caudal peduncle	137	142	144	150	149	149	145
Angular length of caudal peduncle	169	144	149	162	170	172	161
Snout to origin of dorsal fin	423	419	391	430	421	444	421
Snout to origin of anal fin	712	743	742	751	705	696	725
Snout to origin of pelvic fins	449	450	505	462	445	456	461
Length of first dorsal spine	85	73	75	84	70	105	82
Length of second dorsal spine	120	117	110	133	123	145	125
Length of fourth dorsal spine	137	155	157	149	150	193	157
Length of longest dorsal ray	204	-	-	-	217	-	210
Length of base of dorsal fin	663	653	634	670	632	667	653
Length of first anal spine	92	85	96	90	85	82	88
Length of second anal spine	213	217	222	221	211	209	216
Length of longest anal ray	218	208	216	217	209	192	210
Length of base of anal fin	255	254	251	246	246	254	251
Length of middle caudal ray	200	219	227	216	246	-	222
Length of pectoral fin	340	374	357	369	351	345	356
Length of pelvic spine	187	182	190	196	197	217	195
Length of pelvic fin	318	319	353	348	339	337	336

*All specimen numbers are from Field Museum of Natural History.

Anton Bruun Cruise 9, Station 465. H. A. Fehlmann. December 18, 1964.

Description.—Dorsal XIV,13 or 14; anal II,11-13; pectoral rays 17 or 18; caudal fin formula I-I-iii,13,iii-I-I; lateral-line scales with tubes 16-18; vertical scale rows from upper end of gill opening to caudal base 23-25; scales above lateral line to origin of dorsal fin 3; scales below lateral line to origin of anal fin 9-10; circumpeduncular scales 14; gill rakers 7 or 8 + 1 + 18 to 20; branchiostegal rays 6.

Roentgenograms of comparative material show 3 predorsals; vertebrae 11 + 15 (includes fused preural centrum 1 + stegural); caudal fin with 3 epurals; hypurals 1 and 2 separate, hypurals 3 and 4 fused or separate, hypural 5 small, reduced to a thin splint; hypurapophysis on parhypural a thin produced spike, not forked, thickened, or bent; first ventral spiniform procurrent caudal ray supported by haemal spine to preural centrum 3; second ventral spiniform procurrent caudal ray supported by haemal spine to preural centrum 2; first dorsal spiniform procurrent caudal ray supported by neural spine of preural centrum 3 and epural 1; second dorsal spiniform procurrent caudal ray supported by epural 2.

Body moderately deep. Body depth 1.8 [1.8-1.9] in SL, and compressed; width 2.9 [2.7-3.1] in depth; head length 2.9 [2.7-3.0] in SL; snout 4.6 [3.9-5.7] in head; eye 2.5 [2.2-2.6] in head; bony interorbital width 3.0 [3.0-3.2] in head; least depth of caudal peduncle 2.4 [2.3-2.6] in head; angular length of caudal peduncle 2.2 [2.0-2.6] in head; snout to origin of dorsal fin 2.4 [2.2-2.6] in SL; snout to origin of anal fin 1.4 [1.3-1.4] in SL; snout to origin of pelvic fin 2.2 [2.0-2.2] in SL; base of anal fin 2.6 [2.5-2.7] in base of dorsal fin; first dorsal spine 1.6 [1.4-1.8] in second spine; second dorsal spine 1.2 [1.1-1.4] in fourth spine; fourteenth dorsal spine 1.4 [1.2-1.5] in fourth spine; longest dorsal soft ray 1.6 [1.6-1.6] in head; first anal spine usually longer than first dorsal spine (one specimen shorter than first dorsal spine) its length 2.4 [1.9-2.6] in second anal spine; second anal spine 1.6 [1.5-1.8] in head; longest anal soft ray 1.6 [1.5-1.8] in head; middle caudal ray 4.6 [4.0-5.1] in SL; pectoral fins extend to a vertical at origin of second anal spine, the longest pectoral ray 2.8 [2.7-3.0] in SL; the longest pelvic ray 3.0 [2.8-3.2] in SL; pelvic spine 1.7 [1.5-1.9] in head; length of upper jaw 3.0 [2.8-3.2] in head; height of cheek 3.4 [2.8-3.7] in head; orbit to angle of preopercle 3.4 [3.1-3.6] into head.

Mouth terminal, oblique, small, maxillary reaching to slightly beyond a vertical at anterior edge of eye; upper jaw with 40-49 teeth

in outer row; lower jaw with 36-42 teeth in outer row; 1-3 irregular rows of small teeth medial to outer row at front of lower jaw and 1-2 irregular rows of small teeth medial to outer row at front of upper jaw; lips and unscaled portion of snout above upper lip with tiny papillae; anterior nostril with a low fleshy rim, elevated posteriorly into a small flap. Second nostril a slit, situated less than 1 anterior nostril diameter from anterior edge of eye and about 1 anterior nostril diameter above the dorsal corner of infraorbital 1 (lachrymal).

Scales ctenoid; head fully scaled except narrow zone at front of snout and a narrow corridor from eye to upper lip containing anterior nostril and posterior nostril slit; single row of scales on infraorbitals; ventral margins of infraorbitals free except for junctures of infraorbitals 2 and 3, and 3 and 4, which are adnate; 4 rows of scales below this to lower margin of preopercle; 1 or 2 horizontal scale rows on interopercle. Spinous portion of dorsal fin with a basal scaly sheath of one or two scales in width; above this on each interspinous membrane a column of progressively smaller scales which extend approximately halfway to two-thirds to margin of fin; scaly sheath of soft portion of fin not well differentiated from smaller scales above which extend about halfway out between the anterior soft rays but less between the posterior rays. Anal fin with a basal scaly sheath of 2 or 3 scales in width; below this on each interspinous membrane a column of progressively smaller scales which extend approximately halfway to two-thirds out between the anterior rays but less between the posterior rays. Small scales on caudal fin extending about half distance to posterior margin. Pectoral fins scaled only basally. Axillary scale of pelvic fins 1.6 [1.4-1.8] in pelvic spine; intermediate pelvic axillary scale 1.8 [1.4-2.2] in pelvic spine. Tubed part of lateral line ending beneath origin of second dorsal ray; one to four scales with neuromast pits posterior to tubed scales descending in an arc to midline with about 6 to 8 scales with neuromast pits mid-laterally on caudal peduncle to caudal base.

Color after preservation.—Ground color of body orange-brown. Black to dark brown band or "chevron" around the caudal peduncle. Anterior vertical face of chevron not sharply delineated but starts about at origin of last midline scale; dorsal lobe of chevron usually slightly longer than ventral lobe. Eye with a dorso-anterior black patch. Pectoral fins with clear membranes; axillary spot black ventrally to the ninth ray or can continue down as far as last ray; basal scales on anterior face of pectorals with black-brown speckles. Mem-

branes of dorsal, anal, and pelvic fins speckled or dusky. Scales on dorsal and anal fins dark brown but not as dark as caudal band.

Remarks.—Chromis axillaris is distinguished from all other species of the genus by the combination of three characters: (1) presence of a caudal band, (2) lack of an anal stripe, and (3) a dorsal fin formula of XIV,13-14. Additional characters useful in separating this species out from other *Chromis* are as follows: 17-18 pectoral rays; anal fin formula II,11-13; two spiniform caudal rays; 14 circumpeduncular scales; and a gill raker formula for the first gill arch of 7-8 + 1 + 18-20 with a total gill raker count of 26 to 29.

The original description by Bennett (1831, p. 128) is written in Latin and based on a single specimen from a collection of fishes made at Mauritius: "*Heliases axillaris. Hel.* pallidè caeruleo-fuscus?; axillâ nigrâ; pinnis, praesertim caudali analique, caeruleo-nigrescentibus. D.14/14. A.2/12. Affinis, ut videtur, *Hel. anali*, Cuv. et Val. Radius secundus pinnae analis fortior, sequentes longitudine aliquantulum superans. Corpus ovatum." Unfortunately, Smith (1960, p. 324) in his classic work on the pomacentrids mistranslated Bennett's original description to state that the anal soft rays were shorter than the second anal spine. Actually, Bennett wrote that the anal soft rays were somewhat longer than the second anal spine. Anyone trying to identify *Chromis axillaris* using Smith's key will come out to his Species Group D and be unable to identify the specimen. The size of the holotype and a figure were not given in the original description. The holotype of *Heliases axillaris* was catalogued as No. 137 in the Museum of the Zoological Society of London. Most of this collection came to the British Museum (Natural History) in 1855 and 1856, but the register of that period does not list this specimen by name. The fact that Günther (1862, p. 61) does not list this specimen suggests that the holotype was lost sometime before 1855 (Alwyne Wheeler, pers. comm.).

Alvin Seale (*in* Jordan and Seale, 1906) reported collecting specimens of *Chromis axillaris* from Raiatea in the Society Islands. These specimens were catalogued into the Bernice P. Bishop Museum as numbers BPBM 1682-1684.[1] We do not know of any valid records of *C. axillaris* outside the Indian Ocean and agree with Randall who does not believe it is in the Society Islands.

[1]Fowler (1928, p. 309) reidentified these specimens as *C. caerulea*. Arnold Suzumoto, technician at the BPBM, informs me that BPBM 1682 and 1683 were confirmed as *C. caerulea* by Gerald R. Allen.

Gudger (1929, p. 520) cited one of Nicolas Pike's doubtfully labeled figures (no. 240) as *Heliastes axillaris* Benn.(?). But, after examining a copy of the original illustration, it can be definitely stated that Pike's figure is not *Chromis axillaris.* Pike's fish has a dorsal fin formula of XII,14, unlike *C. axillaris* which has a dorsal fin formula of XIV,13-14. Bleeker (1878, p. 84; 1879, p. 15), Sauvage (1891, p. 523), and Baissac (1953, p. 2; 1956, p. 333) apparently all listed *C. axillaris* as being from Mauritius without ever seeing specimens. The fact that this is the first time that *C. axillaris* has been collected since the original description is not surprising. All our specimens of *C. axillaris* were collected from depths of 64 to 72 m.

Specimen FMNH 85003 is a female ripe with eggs and was collected in December.

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REFERENCES

ALLEN, GERALD R.

1972. The anemone fishes, their classification and biology. T.F.H. Publications, Inc., Neptune City, N.J. 288 pp., 140 figs.

BAISSAC, J. de B.

1953. Annual report of the fisheries branch 1953. Bd. Agricul., Fish. Nat. Res., Colony of Mauritius. 42 (f).

1956. Contributions à l'etude des poissons de l'île Maurice. Proc. Roy. Soc. Arts. Sci. Mauritius, 1, pt. 4, pp. 319-365.

BENNETT, E. T.

1831. Observations on a collection of fishes from the Mauritius, presented by Mr. Telfair, with characters of new genera and species. Proc. Zool. Soc. London, **1830-1831**, Pt. 1, pp. 126-128.

BLEEKER, PIETER

1878. Recherches sur la faune de Madagascar et de ses dépendances de'après les découvertes de Francois P. L. Pollen et D. C. van Dam. 4e Partie. Poissons de Madagascar et de l'île de la Réunion. Leide. 89 pp., 21 pls.

1879. Contribution à la fauna ichthyologique de l'île Maurice. Verhandl. Akad. Amsterdam, **18**, pp. 1-23.

FOWLER, HENRY W.

1928. The fishes of Oceania. Mem. B. P. Bishop Mus., **10**, 540 pp.

GUDGER, E. W.

1929. Nicolas Pike and his unpublished paintings of the fishes of Mauritius, Western Indian Ocean, with an index to the fishes. Bull. Amer. Mus. Nat. Hist., **58**, art. 9, pp. 489-530.

GÜNTHER, ALBERT

1862. Catalogue of the Acanthopterygii, Pharyngognathi and Anacanthini in the collection of the British Museum, Vol. IV. London. 534 pp.

JORDAN, DAVID STARR, and ALVIN SEALE

1906. The fishes of Samoa. Description of the species found in the archipelago, with a provisional check-list of the fishes of Oceania. Bull. Bur. Fisheries, **25**, pp. 173-455.

SAUVAGE, M. H.

1891. Histoire naturelle des poissons. Histoire physique, naturelle et politique de Madagascar, Vol. XVI. Paris. 543 pp., 50 pls.

SMITH, J. L. B.

1960. Coral fishes of the Family Pomacentridae from the Western Indian Ocean and the Red Sea. Ichthyol. Bull., Rhodes Univ., Grahamstown, S. Africa, no. 19, pp. 317-349, 8 pls., 6 figs.